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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,046	02/25/2004	Wilhelmus Josephus Box	081468-0308294	8581
909 7590 09/11/2007 PILLSBURY WINTHROP SHAW PITTMAN, LLP Eric S. Cherry - Docketing Supervisor P.O. BOX 10500 MCLEAN, VA 22102			EXAMINER KIM, PETER B	
			ART UNIT 2851	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/785,046	Applicant(s) BOX, WILHELMUS JOSEPHUS	
	Examiner Peter B. Kim	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/307,485.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments filed on July 19, 2007 have been fully considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1, 8, 18 and 19, it is not clear how the material is manufactured at a temperature such that the temperature at which CTE crosses zero is between the manufacturing temperature and the mean operating temperature.

Applicant discloses in the specification para 0033 and in the IDS that for Zerodur or the material, the temperature at which CTE crosses zero is 26 degree Celsius or near room temperature. The mean operating temperature as disclosed by applicant is 30 degree Celsius. The mean operating temperature must be higher than room temperature since in a lithographic apparatus the illumination beam would heat the optical device to a temperature higher than room temperature. Thus, the manufacturing temperature must be lower than 26 degrees Celsius or below room temperature. In "ZERODUR Glass Ceramic" published by Schott, Zerodur is manufactured by "raw materials are molten, refined, homogenized and finally, hot formed." It seems that in order to manufacture the material the temperature required is significantly higher

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than 26 degree Celsius. Since applicant only discloses that the claimed the material is chosen to meet the claimed requirements, it seems that the disclosure is inadequate as to how material such as Zerodur can meet such requirement.

The remaining claims, not specifically mentioned, are rejected for incorporating the defects from the base claim by dependency.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4, 5, 11, and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 4 and 11, the term “low” is unclear because it is a relative term, and without a standard to which to compare, the term “low” is meaningless. Further, since the coefficient can have negative and positive value it is not clear whether the value has a low absolute value or if the value has a negative value.

Regarding claims 4, 5, 11 and 12, it is not clear with respect to which temperature the coefficient is low or has a substantially zero coefficient. The independent claims recite a first, a second and a mean operating temperature each having distinct coefficient, and it is not clear at which temperature the coefficient is low or has a substantially zero coefficient.

In view of the issues discussed above, the following art rejection is based on the examiner’s best understanding of the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 8, 11, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morin, SR. etc. (Morin) (2002/0064655) in view of Gruner et al. (Gruner) (2002/0075466).

Morin discloses a method of manufacturing a component and the component comprising glass material (para 0013) and tailoring coefficient of thermal expansion where the value is negative or zero depending on appropriate control of additives or process (para 0005, 0011). Although Morin does not explicitly disclose that the temperature at which the coefficient of thermal expansion is between the manufacturing temperature and the mean operating temperature, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a method or a component in which the coefficient of thermal expansion has a zero-crossing at a first temperature, the manufacturing the component at a second temperature and the first temperature is between the second temperature and the mean operating temperature because the component is manufactured at a temperature, and the mean operating temperature depends on the operation in which the component is used, and with the two temperatures provided, it would be a routine skill as taught by Morin to tailor the zero-crossing of the coefficient of thermal expansion to fall between the two temperatures. However, Morin does not disclose the mean operating temperature of the material. Gruner discloses the material (para 0024) which is used in a lithography apparatus to manufacture a device (abstract), which would

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have a mean operating temperature above the room temperature, the temperature at which Zerodur's CTE crosses zero. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the material to tailor the CTE and use the material in a lithographic apparatus to manufacture a device in order to prevent aberration due to thermal expansion of the material.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

In response to the filing of terminal disclaimer, the obviousness type double patenting rejection is withdrawn.

Regarding the rejection based on 35 USC 112, second paragraph, as shown in Fig. 2 of the instant application, CTE is dependent on temperature. Claiming that the material has low CTE without specifying at which temperature, make is indefinite because any material depending on a particular temperature could exhibit characteristics of low CTE.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Peter B. Kim
Primary Examiner
Art Unit 2851

September 1, 2007.